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Type: **Poster Presentation**

## Synthesis and magnetic properties of $\text{Mg}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ nanoferrites

*Tuesday, 9 July 2013 17:40 (1 hour)*

### Abstract content <br> &nbsp; (Max 300 words)

$\text{Mg}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$  nanoparticles ( $0 < x < 1$  in steps of 0.1) have been produced by centrifugation using the low temperature glycol-thermal method at 200 C. Single-phase formation was confirmed by X-ray powder diffraction which revealed a well-defined cubic spinel structure with space group  $\text{Fd}\bar{3}\text{m}$ . The crystallite size of the compounds ranged from 10.6-22.2 nm. A strong correlation was found between X-ray density and Zn-concentration ( $x$ ). The magnetic properties as a function were investigated by using a  $^{57}\text{Fe}$  Mössbauer spectroscopy and magnetization measurements using vibration sample magnetometer at room temperature. The results show Zn-concentration induced transformation from paramagnetic state to magnetic ordered for  $x < 0.8$  for the studied nanosized samples.

### Apply to be<br> considered for a student <br> &nbsp; award (Yes / No)?

No

### Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD)?

N/A

### Main supervisor (name and email)<br>and his / her institution

N/A

### Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

Yes

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